

P24785.S00

WHAT IS CLAIM IS:

1. A communication apparatus selectively connectable to a central communication apparatus, comprising:

a transmitter that simultaneously transmits a first mode select (MS) signal, a second MS signal, and a third MS signal to the central communication apparatus during a negotiation procedure that designates a predetermined digital subscriber line (xDSL) communication mode, said first, second and third MS signals carrying identical data with an identical timing, but using different carrier frequencies; and

a receiver that receives one of acknowledge (ACK) signals and negative acknowledge (NAK) signals, transmitted from the central communication apparatus, in response to said simultaneously transmitted first, second and third MS signals, wherein said different carrier frequencies of said first, second and third MS signals and carrier frequencies utilized by said one of said ACK signals and said NAK signals belong to a mutually different band, wherein each of said first, second and third MS signals include an identification field and a standard information field.

2. The communication apparatus of claim 1, wherein said identification field stores modulation independent information, and said standard information field stores modulation dependent information.

P24785.S00

3. The communication apparatus of claim 1, wherein said different carrier frequencies utilized by said first, second and third MS signals comprise 9 times a base family frequency, 17 times said base family frequency, and 25 times said base family frequency.

4. The communication apparatus of claim 3, wherein said base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

5. The communication apparatus of claim 1, wherein said different carrier frequencies utilized by said first, second and third MS signals are lower than said carrier frequencies utilized by said one of said ACK signals and said NAK signals.

6. The communication apparatus of claim 1, wherein each of said first, second and third MS signals further includes a non-standard information field that stores information other than information stored in said identification field and information stored in said standard information field.

7. The communication apparatus of claim 6, wherein said non-standard information field stores at least one of a country code and a provider code.

8. The communication apparatus of claim 1, wherein said identification field within each MS signal includes revision information.

P24785.S00

9. The communication apparatus of claim 1, wherein said standard information field of each MS signal includes information designating one of ITU-T Recommendation G.992.1 and ITU-T Recommendation G.992.2.

10. A method for selectively connecting a remote communication apparatus to a central communication apparatus, comprising:

simultaneously transmitting a first mode select (MS) signal, a second MS signal, and a third MS signal to the central communication apparatus during a negotiation procedure that designates a predetermined digital subscriber line (xDSL) communication mode, the first, second and third MS signals carrying identical data with an identical timing, but using different carrier frequencies; and

receiving one of acknowledge (ACK) signals and negative acknowledge (NAK) signals, transmitted from the central communication apparatus, in response to the simultaneously transmitted first, second and third MS signals, wherein the different carrier frequencies of the first, second and third MS signals and carrier frequencies utilized by the one of the ACK signals and the NAK signals belong to a mutually different band, each of the first, second and third MS signals including an identification field and a standard information field.

P24785.S00

11. The method of claim 10, further comprising storing modulation independent information in the identification field, and storing modulation dependent information in the standard information field.

12. The method of claim 10, wherein employing different carrier frequencies comprises 9 times a base family frequency, 17 times the base family frequency, and 25 times the base family frequency.

13. The method of claim 12, wherein the base family frequency comprises one of 4.3125 kHz and 4.000 kHz.

14. The method of claim 10, further comprising utilizing different carrier frequencies with the first, second and third MS signals that are lower than the carrier frequencies utilized by the one of the ACK signals and the NAK signals.

15. The method of claim 10, further comprising including a non-standard information field and a standard information field for each of the first, second and third MS signals, the non-standard information field storing information other than information stored in the identification field and information stored in the standard information field.

16. The method of claim 15, further comprising storing at least one of a country code and a provider code in the non-standard information field.

17. The method of claim 10, further comprising associating revision information with the identification field of each MS signal.

P24785.S00

18. The method of claim 11, further comprising associating information designating one of ITU-T Recommendation G.992.1 and ITU-T Recommendation G.992.2 with the standard information field of each MS signal.

19. A method for selectively connecting a remote communication apparatus to a central communication apparatus, comprising:

simultaneously transmitting plural mode select (MS) signals to the central communication apparatus during a negotiation procedure that designates a predetermined digital subscriber line (xDSL) communication mode, the plural MS signals carrying identical data with an identical timing, but using different carrier frequencies; and

receiving one of acknowledge (ACK) signals and negative acknowledge (NAK) signals, transmitted from the central communication apparatus, in response to the simultaneously transmitted plural MS signals, wherein the different carrier frequencies of the plural MS signals and carrier frequencies utilized by the one of the ACK signals and the NAK signals belong to a mutually different band, each MS signal of the plural MS signals including an identification field and a standard information field.

20. The method of claim 19, further comprising storing modulation independent information in the identification field, and storing modulation dependent information in the standard information field.

P24785.S00

21. The method of claim 19, further comprising utilizing different carrier frequencies with the plural MS signals that are lower than the carrier frequencies utilized by the one of the ACK signals and the NAK signals.

22. The method of claim 19, further comprising including a non-standard information field and a standard information field for each MS signal, the non-standard information field storing information other than information stored in the identification field and information stored in the standard information field.

23. The method of claim 19, further comprising storing at least one of a country code and a provider code in the non-standard information field.

24. The method of claim 19, further comprising associating revision information with the identification field of each MS signal.

25. The method of claim 19, further comprising associating information designating one of ITU-T Recommendation G.992.1 and ITU-T Recommendation G.992.2 with the standard information field of each MS signal.

26. A first communication apparatus selectively connectable to a second communication apparatus, comprising:

a transmitter that simultaneously transmits plural mode select (MS) signals to the second communication apparatus during a negotiation procedure that designates a predetermined digital subscriber line (xDSL) communication mode, said plural MS

P24785.S00

signals carrying identical data with an identical timing, but using different carrier frequencies; and

a receiver that receives one of acknowledge (ACK) signals and negative acknowledge (NAK) signals, transmitted from the second communication apparatus, in response to said simultaneously transmitted plural MS signals, wherein said different carrier frequencies of said plural MS signals and carrier frequencies utilized by said one of said ACK signals and said NAK signals belong to a mutually different band, each MS signal of said plural MS signals including an identification field and a standard information field.

27. The apparatus of claim 26, wherein said different carrier frequencies of said plural MS signals are lower than said carrier frequencies utilized by said one of said ACK signals and said NAK signals.

28. The apparatus of claim 26, wherein each MS signal of said plurality of MS signals includes a non-standard information field and a standard information field, said non-standard information field storing information other than information stored in said identification field and information stored in said standard information field.

29. The apparatus of claim 26, wherein said non-standard information field stores at least one of a country code and a provider code.

P24785.S00

30. The apparatus of claim 26, wherein said identification field of each MS signal includes revision information.

31. The apparatus of claim 26, wherein said standard information field of each MS signal designates one of ITU-T Recommendation G.992.1 and ITU-T Recommendation G.992.2.